

REMARKS/ARGUMENTS

Reconsideration of this application, as amended, is respectfully requested. The following remarks are responsive to the Office Action of June 30, 2004. Claims 23 and 46 have been amended and remain in the application. The above amendments are supported by the Specification as filed. Accordingly, no new matter is added.

Claims 23 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over McComb et al. (U.S. Patent No. 4,785,336, hereinafter, "McComb") in view of Welbourn et al. (U.S. Patent No. 4,663,522, hereinafter, "Welbourn"). Independent claims 23 and 46 of the present application each recite an apparatus and a method, respectively, in which two detectors are used. Importantly, one of the detectors is configured to detect scattered light with a greater sensitivity than the other detector, which saturates at higher intensity of scattered radiation than does the first detector. None of the cited references, whether considered alone or in combination, describes such an arrangement or method.

McComb describes an apparatus for optically measuring a thickness of a transparent or semi-transparent material. Although McComb discloses an integrating sphere that includes a detector and an optional filter to capture a desired component of the reflected light (e.g., "Z" component), the reference does discuss configuring the first detector, or the first detector being configured, to detect variations in the scattered radiation with a greater sensitivity than the second detector and the second detector, or the second detector being configured, to saturate at a higher intensity of the scattered radiation than the first detector, as recited in the present claims. In fact, McComb's discussion of detectors is limited to merely adding additional detector ports and detectors (e.g., photocells) to increase signal magnitude if the reflected radiation is too weak to detect. Accordingly, the claims are patentable over the McComb patent.

Welbourn discusses an apparatus for measuring the transmission of light in successive falling objects where a beam of light falling onto a detector is interrupted or diffused by a falling object and resulting scattered transmissions are further gathered in an integrating sphere as flux to be measured by another detector. However, Welbourn does not discuss, as recited in the present claims, configuring the first detector, or the first detector being configured, to detect variations in the scattered radiation with a greater sensitivity than the second detector and the second detector, or the second detector being configured, to saturate at a higher intensity of the scattered radiation than the first detector, as recited in the present claims. Thus, Welbourn does not cure the deficiencies of McComb, and, therefore, the present claims are patentable over this reference whether considered alone or in combination with the McComb.

For all of the foregoing reasons, the claims are patentable over the references cited in the Office Action. If there are any additional fees due in connection with this communication, please charge our deposit account no. 02-2666.

Respectfully submitted,

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